UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/411,515	10/04/1999	CHUN-SHI CHANG	PO9-99-067	8417

7590	11/14/2003		EXAMINER

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EXAMINER
MIRZA, ADNAN M

ART UNIT	PAPER NUMBER
2141	13

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/411,515	CHANG ET AL.
	Examiner	Art Unit
	Adnan M Mirza	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 September 2003</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   Examiner withdraws 112 rejections.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-2,7-19,24-37-42-52are rejected under 35 U.S.C. 103(a) as being unpatentable

over Moiin (U.S. 6,108,699) and Bertin et al (6,400,681).

As per Claims 1,18,35 & 36 Moiin disclosed a method of reconfiguring a network having a

plurality of nodes to reflect a change in topology of said network, said method comprising: upon

receiving

a reconfiguration request at one node of said plurality of nodes (col. 2, lines 39-44), entering a

quiescent state at said one node, wherein said one node remains in said quiescent state for a

predetermined period of time sufficient to allow at least one other node of said plurality of nodes

to also enter a quiescent state (col. 2, lines 23-34);

However Moiin did not disclose in details reconfiguring said one node to reflect said change in

topology of said network without checking with said at least one other node.

In the same field of endeavor, Bertin disclosed the network topology information is updated when new links are activated, new nodes added to the network, when link or nodes are dropped or when link loads change significantly. Such information is exchanged by means of control messages with all other Route Controllers to provide the up-to-date topological information needed for path selection. The fact that the network topology is kept current in every node through continuous updates allows dynamic network reconfigurations without disrupting end users logical connections (col. 8, lines 34-44). One ordinary skill in the art at the time of the invention has the knowledge to consider the reconfiguration or the addition of the node or link will result in update of topology that can interrupted to change in topology of the node when it reconfigures upon termination of quiescent state.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated the network topology information is updated when new links are activated, new nodes added to the network, when link or nodes are dropped or when link loads change significantly. Such information is exchanged by means of control messages with all other Route Controllers to provide the up-to-date topological information needed for path selection. The fact that the network topology is kept current in every node through continuous updates allows dynamic network reconfigurations without disrupting end users logical connections as taught by Bertin in the method of Moiin to increase the efficiency of the network by reducing the dependency of the nodes on each other.

4.   As per claims 2,19,37 Moiin-Bertin disclosed wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node

to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state (Moiin, col. 6, lines 1-17).

5.	As per claims 7, 24, 42 Moiin-Bertin disclosed wherein said reconfiguring said one node occurs without any communication to said node from said at least one other node of said plurality of nodes (Moiin, col. 2, lines 40-46).

6.	As per claims 8, 25, 43, Moiin-Bertin taught wherein said reconfiguring said one node comprises refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state (Moiin, col. 6, lines 1-15), and upon termination of said grace period, observing said change in topology at said one node (Frank, col. 8, lines 34-44).

7.	As per claims 9, 26, 44, Moiin-Bertin disclosed wherein said reconfiguration request results from addition or removal of a node or at least one other network to said network (Bertin, col. 8, lines 33-44).

8.	As per claims 10, 27, 45 Moiin-Bertin where said reconfiguration request results from a change in address of a node of said network (Bertin, col. 9, lines 34-43).

9.   As per claims 11, 28, 46, Moiin-Bertin disclosed wherein said network is reconfigured

without interrupting currently executing protocols (Moiin, col. 6, lines 50-56).

10.   As per claims 12, 29, 47, Moiin-Bertin taught wherein said network is reconfigured

without a global synchronization protocol (Moiin, col. 6, lines 1-15).

11.   As per claims 13, 30, 48, Moiin-Bertin taught further comprising transmitting, upon

entering said quiescent state, a reconfiguration request causes said at least one other node to enter

a quiescent state (Moiin, col. 2, lines 23-34).

12.   As per claims 14,31,49, Moiin-Bertin taught wherein said reconfiguration request

comprises one of a message having a reconfiguration sequence identifier and a message having a

configuration sequence identifier different from a configuration identifier of said one node

(Moiin, col. 5, lines 55-64).

13.   As per claims 15,32,50, Moiin-Bertin taught wherein said network comprises a plurality

of interconnected computing networks together implementing a distributed node and adapter

status monitoring system (Bertin, col. 11, lines 24-30).

14.   As per claims 16,33,51 Moiin-Bertin taught further comprising preventing by said node

when in said quiescent state, execution of new protocols by ignoring proclaim, join, node,

connectivity and group connectivity messages and by no longer monitoring heartbeat messages

(Moiin, col. 8, lines 44-58).

15.   As per claims 17, 34, 52, Moiin-Bertin taught further comprising transmitting, by said

node when in said quiescent state, proclaim heartbeat, node connectivity, and group connectivity

message with a reconfiguration sequence identifier to propagate reconfiguration requests to said

at least one other node (Moiin, col. 9, lines 50-65).

16.   Claims 3-6,20-23,38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Moiin (U.S. 6,108,699), Bertin et al (6,400,681) and Frank et al (U.S. 6,532,494).

17.   As per claims 3,20,38, Moiin-Bertin substantially disclosed the invention in claims

1,18,35,16 but did not disclose in detail wherein said predetermined period of time comprises an

amount of time sufficient for protocol running on said network to complete execution.

In the same field of endeavor Frank disclosed if a node failed to receive a heartbeat message

from one of the other nodes within a predetermined time interval, the cluster would enter

reconfiguration mode (col. 5, lines 18-20).

It would have obvious to one having ordinary skill in the art at the time the invention was made

to have incorporated if a node failed to receive a heartbeat message from one of the other nodes

within a predetermined time interval, the cluster would enter reconfiguration mode as taught by

Frank in the method of Moiin-Bertin to avoid the loss of system integrity by the failure or

addition of the nodes or links.

18.   As per claims 4, 21, 39 Moiin-Bertin-Frank taught wherein said protocols comprise one

of a heartbeat, join, death, or node reachability protocol (Frank, col. 5, lines 58-61).

19.   As per claims 5,22,40, Moiin-Bertin-Frank disclosed wherein said predetermined period

of time comprises an amount of time sufficient for a protocol currently running on said network

to perform a predetermined number of retries plus a predetermined amount of time between each

retry, wherein after attempting said predetermined number of retries, said protocol completes

execution (Frank, col. 5, lines 44-53).

20.   As per claims 6, 23, 41, Moiin-Bertin-Frank disclosed wherein said protocol comprises

one of a heartbeat, join, death, or node reachability protocol (Frank, col. 5, lines 44-53).

Applicant's arguments are as follows:

21.   Applicant argued that prior art did not disclose, " This quiescent state is entered by a

node, upon receiving a reconfiguration request at the node. The node stays in quiescent state for

period of time sufficient to allow at least one of the node to also enter a quiescent state. Upon

termination of the quiescent state of the node, the node is reconfigured to reflect a change in

topology of the network without checking with at least one other node".

As to applicant's argument Moiin disclosed failure to receive messages from a particular node in

a predetermined period is detected as a failure of the node. In response to the detected failure, the

node detecting the failure sends a reconfigure message. Each node receiving reconfigure

message broadcasts in response thereto a reconfigure message to all nodes and determines from

which nodes a reconfigure message is received (col. 2, lines 40-47).

22.   Applicant argued that prior art did not disclose the node remaining in the quiescent state

for a predetermined period of time sufficient to allow at least one other node of the plurality of

the nodes to also enter a quiescent state.

As to applicants argument Moiin disclosed if one node detects failure of another node and sends

a reconfiguration message to form a new cluster which excludes the failed node. In such

circumstances, the former failure-detecting node sends a reconfiguration message in lieu of

receiving a reconfiguration message in step 602 but performs steps in the manner otherwise

Described herein (col. 10, lines 48-54).

Conclusion

23.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

24.   Any inquiry concerning this communication or earlier communication from the examiner

should be directed to Adnan Mirza whose telephone number is (703)-305-4633.

25.   The examiner can normally be reached on Monday to Friday during normal business

hours.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Wiley can be reached on (703)-308-5221. The fax for this group is (703)-746-

7239.

26.   The fax phone numbers for the organization where this application or proceeding is

assigned are as follows:

(703)-746-7239 (For Status Inquiries, Informal or Draft Communications, please label

"PROPOSED" or "DRAFT");

(703)-746-7239 (For Official Communications Intended for entry, please mark "EXPEDITED

PROCEDURE"),

(703)-746-7238 (For After Final Communications).

27.   Any Inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703)-305-3900.

Any response to a final action should be mailed to:

BOX AF

        Commissioner of Patents and Trademarks Washington, D.C.20231

Or faxed to:

        Hand-delivered responses should be brought to 4th Floor Receptionist, Crystal Park II,

2021 Crystal Drive, Arlington, VA 22202.

Adnan Mirza

Examiner

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER